

REMARKS

The present Amendment is in response to the Examiner's Office Action (hereinafter referred to as "the Office Action") mailed March 8, 2007. Claims 4, 5, 9, and 10 are amended, no claims are cancelled and new claims 11-13 are added. Claims 1-13 are now pending in view of the above amendments.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

I. General Considerations

Applicants note that the remarks and amendments presented herein have been made merely to clarify the claimed embodiments from elements purported by the Examiner to be taught by the cited references. Such remarks, or a lack of remarks, and amendments are not intended to constitute, and should not be construed as, an acquiescence, on the part of the Applicants: as to the purported teachings or prior art status of the cited references; as to the characterization of the cited references advanced by the Examiner; or as to any other assertions, allegations or characterizations made by the Examiner at any time in this case. Applicant reserves the right to challenge the purported teaching and prior art status of the cited references at any appropriate time.

In addition, the remarks herein do not constitute, nor are they intended to be, an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed herein are presented solely by way of example. Consistent with the foregoing, the discussion herein is not intended, and should not be construed, to prejudice or foreclose contemporaneous or future consideration, by the Applicant, of additional or alternative distinctions between the claims of the present application and any references cited by the Examiner, and/or the merits of additional or alternative arguments.

II. Claim Objections

The Office Objected to claims 4-5 and 9-10 as being of improper multiple dependent form. In response, Applicants have amended these claims to be in proper multiple dependent form. Accordingly, Applicants request that the objection be withdrawn.

III. PRIOR ART REJECTIONS

A. Rejection Under 35 U.S.C. §102(a/b/e)

The Office Action rejects claims 1-3 and 6-8 under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 4,468,086 to Liu ("Liu"). As an initial matter, Applicants respectfully note that a claim is anticipated under 35 U.S.C. § 102(a), (b), or (e) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Further, the identical invention must be shown in as complete detail as is contained in the claim. Finally, the elements must be arranged as required by the claim. *Manual of Patent Examining Procedure ("MPEP") § 2131.*

As recited above, claims 1-3 and 6-8 variously require the following elements:

- An optical waveguide with an optical group index (n_o)
- The optical waveguide having an optical signal propagating at an optical velocity (v_o)
- A microwave transmission line with an electrical propagation index (n_p)
- The microwave transmission line having an electrical signal propagating at an electrical velocity (V_e)
- wherein the electrical propagation index (n_p) of the unloaded microwave transmission line is lower than the optical group index (n_o) of the optical waveguide
- electrical velocity (V_e) in the adjusted microwave transmission line is substantially equal to the optical velocity (v_o) in the optical waveguide

The Office Action, cites Figure 2 and several passages of Liu to show the recited elements of claims 1-3 and 6-8. However, the cited portions do not teach or disclose all of the

recited elements. For example, the cited portions do not appear to teach the recited optical group indexes or the electrical velocities. Further, the cited portions make no mention of the electrical propagation index of the unloaded microwave transmission line being lower than the optical group index of the optical waveguide or that the electrical velocity in the adjusted microwave transmission line is substantially equal to the optical velocity in the optical waveguide.

In addition, the Office Action states that it is inherent any line with a length would have a Bloch impedance and an electrical velocity. Applicants respectfully note that inherency is not readily established. For example, as noted in MPEP § 2112, the Examiner must provide rationale or evidence showing inherency. In particular, “The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.” *In re Rijckaert*, 9 F.3d 1531, 1534 28 USPQ 2d 1955, 1957 (Fed. Cir. 1993) (emphasis in original). Moreover, the Court of Appeals for the Federal Circuit has noted that “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described by the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a thing may result from a given set of circumstances is not sufficient’.” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ 2d 1949, 1950-51 (Fed. Cir. 1999) (emphasis added).

Finally, “In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Ex Parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). Applicants respectfully submit that the Examiner has not properly shown inherency.

Accordingly, Applicants respectfully submit that the Office Action has not established that Liu anticipates claims 1 and 6 at least because the Office Action has not established that each and every element as set forth in claims 1 and 6 is found in Liu, because the Office Action has not established that the identical invention is shown in as complete detail in Liu as is contained in claims 1 and 6, and because the Office Action has not shown that Liu discloses that the elements must be arranged as required in claims 1 and 6. Applicants thus submits that the rejection of independent claims 1 and 6, as well as the rejection of corresponding dependent claims 2-3 and 7-8 should be withdrawn.

B. Rejection Under 35 U.S.C. § 103

The Office Action rejects claims 4-5 and 9-10 under 35 U.S.C. § 103 as being unpatentable over Liu in view of United States Patent Application Publication No. 2003/0147574 to Lam et al. ("Lam"). Applicants respectfully note at the outset that in order to establish a *prima facie* case of obviousness, it is the burden of the Office Action to demonstrate that the prior art reference (or references when combined) must teach or suggest all the claim limitations. *MPEP § 2143*.

Claims 4-5 and 9-10 variously depend from independent claims 1 and 6 and thus include all of the limitations of claims 1 or 6. As mentioned above, Liu does not teach each and every element of independent claims 1 and 6. Lam does not teach the missing elements of Liu and is not cited by the Office Action as teaching such. Accordingly, the purported combination of Liu and Lam do not teach or suggest all of the limitations of claims 4-5 and 9-10. Accordingly, Applicant respectfully notes that a *prima facie* case of obviousness has not been made and the rejection for these claims should be withdrawn.

IV. New Claims

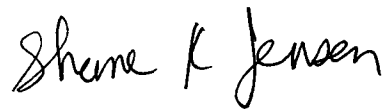
As shown above, Applicant has added new independent claim 11 and dependent claims 12 and 13. Applicants submit that these claims are allowable over the cited art for at least the reason that the cited art does not teach or suggest each and every limitation of the claims 11-13.

CONCLUSION

In view of the foregoing, Applicants believe that they have addressed every issue raised in the Office Action and has put the claims in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 9th day of July, 2007.

Respectfully submitted,

A handwritten signature in cursive script that reads "Shane K. Jensen".

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